In re Application of: Alexei SHIR et al
Serial No.: 10/535,189
Filed: September 21, 2006
Office Action Mailing Date: November 26, 2008

Examiner: Terra C. Gibbs
Group Art Unit: 1635
Attorney Docket: 29770

In the claims:

1-95. (Cancelled)

96. (Currently Amended) A method of killing a specific target cell and/or tissue, the method comprising exposing the specific target cell and/or tissue to a composition-of-matter comprising

(i) a double stranded RNA molecule, said molecule consisting of 2 RNA strands which induces viral-like double stranded RNA mediated apoptosis, triggered by up-regulation of interferon (IFN)-α/-ß expression in said cell and/or tissue;

(ii) a nucleic acid carrier; and

(iii) a targeting moiety, said targeting moiety being a ligand or antibody which binds to a cell surface marker being specific to the target cell and/or tissue,

wherein,

said double stranded RNA molecule ~~being~~ is associated with said nucleic acid carrier, said nucleic acid carrier ~~being~~ is associated with said targeting moiety and said targeting moiety is ~~for targeting to the specific target cell and/or tissue~~not covalently bound to said double stranded RNA molecule,

and further wherein said double stranded RNA, said targeting moiety and said nucleic acid carrier form a particle which penetrates solid tumor tissue, thereby killing the specific target cell and/or tissue.

97. (Previously Presented) The method of claim 96, wherein said exposing the specific target cell and/or tissue to said composition-of-matter is effected by administering said composition-of-matter to a vertebrate subject bearing the specific target cell and/or tissue.

98. (Previously Presented) The method of claim 97, wherein said administering said composition-of-matter to said vertebrate subject is effected by administering said composition-of-matter to said subject systemically and/or to a central nervous system location of said vertebrate subject.

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99. (Previously Presented) The method of claim 96, wherein said composition of matter further comprises melittin.

100. – 102. (Cancelled)

103. (Currently Amended) The method of claim 96, wherein said ligand is a growth factor.

104. (Previously Presented) The method of claim 103, wherein said growth factor is epidermal growth factor.

105. (Currently Amended) The method of claim ~~10096~~, wherein said cell surface marker is a growth factor receptor and/or a tumor associated antigen.

106. (Currently Amended) The method of claim ~~10096~~, wherein said surface marker is epidermal growth factor receptor.

107. (Previously Presented) The method of claim 96, wherein said double stranded RNA molecule comprises a polyinosinic acid strand and/or a polycytidylic acid strand.

108. (Previously Presented) The method of claim 96, wherein said nucleic acid carrier comprises a polymer selected from the group consisting of a polycationic polymer, a non-ionic water soluble polymer, a polyether polymer and a biocompatible polymer.

109. (Previously Presented) The method of claim 108, wherein said polymer is polyethylenimine and/or poly(ethylene glycol).

110. (New) The method of claim 96, wherein said double stranded RNA molecule is wholly composed of matching ribonucleotide pairs.

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111. (New) The method of claim 96, wherein said double stranded RNA molecule comprises mismatched ribonucleotide pairs on average less than one base pair in every 29 consecutive base residues.

112. (New) The method of claim 99, wherein a ratio of said double stranded RNA molecule: said nucleic acid carrier: said melittin is selected such that at a concentration of 10 μg/ml the composition is capable of selectively killing more than 95 % of glioblastoma cells 24 hours following transfection as measured in an in vitro assay.

113. (New) The method of claim 96, wherein said carrier is covalently associated with said targeting moiety.

114. (New) The method of claim 96, wherein said double stranded RNA comprises polyinosinic acid-polycytidylic acid (pIC), said nucleic acid carrier comprises polyethylenimine (PEI) and poly(ethylene glycol) and said targeting moiety comprises EGF.